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Bank of Canada
Monthly Research Update

June 2018

This monthly newsletter features the latest research publications by Bank of Canada economists. The report includes papers appearing in external publications and staff working papers published on the Bank of Canada's website.

PUBLISHED PAPERS

In-Press

Allen, Jason & Basiri, Kiana, "Impact of Bankruptcy Reform on Consumer Insolvency Choice", Canadian Public Policy, Volume 44, 100-111

Bauer, Gregory & Pasricha, Gurnain & Sekkel, Rodrigo & Terajima, Yaz, "The Global Financial Cycle, Monetary Policies, and Macroprudential Regulations in Small, Open Economies", Canadian Public Policy, Volume 44, 81-99

Holden, Tom D. & Levine, Paul & Swarbrick, Jonathan M., "Reconciling Jaimovich-Rebelo Preferences, Habit in Consumption and Labor Supply", Economics Letters, Volume 168, 132-137

Forthcoming

Cunningham, Rose & Friedrich, Christian & Hess, Kristina, "Monetary Policy and Financial Stability: Cross-Country Evidence", Journal of Money, Credit and Banking

Garriott, Corey & Walton, Adrian, "Retail Order Flow Segmentation", Journal of Trading

STAFF WORKING PAPERS

Jiongo, Valéry Dongmo & Nguimkeu, Pierre, "Bootstrapping Mean Squared Errors of Robust Small-Area Estimators: Application to the Method-of-Payments Data", Bank of Canada Staff Working Paper 2018-28

Fung, Ben & Hendry, Scott & Weber, Warren E., "Swedish Riksbank Notes and Enskilda Bank Notes: Lessons for Digital Currencies", Bank of Canada Staff Working Paper 2018-27

Holden, Tom D. & Levine, Paul & Swarbrick, Jonathan M., "Reconciling Jaimovich-Rebelo Preferences, Habit in Consumption and Labor Supply", Bank of Canada Staff Working Paper 2018-26

Chu, Ba M. & Huynh, Kim & Jacho-Chávez, David T. & Kryvtsov, Oleksiy, "On the Evolution of the United Kingdom Price Distributions", Bank of Canada Staff Working Paper 2018-25

Zhao, Guihai, "Ambiguity, Nominal Bond Yields and Real Bond Yields", Bank of Canada Staff Working Paper 2018-24

Gambetti, Luca & Dahlhaus, **Tatjana**, "Noisy Monetary Policy", Bank of Canada Staff Working Paper 2018-23

STAFF DISCUSSION PAPERS

Auger, Danny & McRae, Kaetlynd, "A Primer on the Canadian Bankers' Acceptance Market", Bank of Canada Staff Discussion Paper 2018-6

ABSTRACTS

Impact of Bankruptcy Reform on Consumer Insolvency Choice

We examine the impact of the 2009 amendments to the Canadian Bankruptcy and Insolvency Act on consumer insolvency decisions. The amendments were successful in steering debtors out of Division I debt restructuring and into the more cost-effective Division II debt restructuring. Although total insolvencies remained flat after the amendments, they led to a significant substitution out of bankruptcies and into debt restructuring. The extent of substitution greatly depends on regional and individual circumstances. For example, generous asset exemptions under bankruptcy at the provincial level discourage debt restructuring, whereas home ownership encourages it. Our results show, therefore, that the impact of national bankruptcy policies can have sizably different impacts at the regional level.

The Global Financial Cycle, Monetary Policies, and Macroprudential Regulations in Small, Open Economies

This article analyzes the implications of the global financial cycle for conventional and unconventional monetary policies and macroprudential policy in small, open economies such as Canada's. The article starts by summarizing recent work on global financial cycles. These cycles cause time variation in global risk premia, which affects the transmission mechanisms of both conventional and unconventional monetary policies in small, open economies. The article then summarizes new work showing that the central banks' leaning against the effects of the global financial cycle would typically be too costly. The article concludes with some suggestions for the formation of macroprudential policies.

Monetary Policy and Financial Stability: Cross-Country Evidence

We explain the heterogeneous response of central banks to financial stability risks based on a financial stability orientation index, which reflects statutory, regulatory and discretionary components of central banks' monetary policy frameworks. Our baseline results from a cross-country panel of modified Taylor rules suggest that central banks with a high financial stability orientation increase their policy rates in response to elevated financial stability risks by 0.27 percentage points more than central banks with a low orientation. Back-of-the-envelope calculations suggest that this policy rate differential translates into a reduced crisis probability but also into considerably lower inflation and output growth rates.

Reconciling Jaimovich–Rebello preferences, habit in consumption and labor supply

This note studies a form of a utility function of consumption with habit and leisure that (a) is compatible with long-run balanced growth, (b) hits a steady state observed target for hours worked and (c) is consistent with micro-econometric evidence for the inter-temporal elasticity of substitution and the Frisch elasticity of labor supply. Employing Jaimovich–Rebello preferences our results highlight a constraint on the preference parameter needed to target the steady-state Frisch elasticity. This leads to a lower bound for the latter that cannot be reconciled empirically with external habit, but the introduction of a labor wedge solves the problem. We also propose a dynamic Frisch inverse elasticity measure and examine its business cycle properties.

Retail Order Flow Segmentation

In August 2012, the New York Stock Exchange launched the Retail Liquidity Program (RLP), a new trading facility that enables participating organizations to quote dark limit orders available only to retail traders. The facility increased the information content of the order flow by distinguishing retail trades from relatively more informed trades. Stocks with substantial RLP activity experienced no material changes in relative bid-ask spreads, effective spreads, and price impacts, and had mildly decreased return autocorrelations.

Bootstrapping Mean Squared Errors of Robust Small-Area Estimators: Application to the Method-of-Payments

This paper proposes a new bootstrap procedure for mean squared errors of robust small-area estimators. We formally prove the asymptotic validity of the proposed bootstrap method and examine its finite sample performance through Monte Carlo simulations. The results show that our procedure performs well and outperforms existing ones. We also apply our procedure to the estimation of the total volume and value of cash, debit card and credit card transactions in Canada as well as in its provinces and subgroups of households. In particular, we find that there is a significant average annual decline rate of 3.1 percent in the volume of cash transactions, and that this decline is relatively higher among high-income households living in heavily populated provinces. Our bootstrap estimator also provides indicators of quality useful in selecting the best small-area predictors from among several alternatives in practice.

Swedish Riksbank Notes and Enskilda Bank Notes: Lessons for Digital Currencies

This paper examines the experience of Sweden with government notes and private bank notes to determine how well the Swedish experience corresponds to that of Canada and the United States. Sweden is important to study because it has had government notes in circulation for more than 350 years, and it had government notes before private bank notes. Several differences between the experience of Sweden and that of Canada and the U.S. emerge. (i) Swedish bank notes were safe; in some cases, those of Canada and the U.S. were not. (ii) At certain times, Swedish government notes were not safe; government notes in Canada and the U.S. always were. (iii) Swedish private bank notes were a uniform currency without government intervention. Uniformity required government intervention in Canada and the U.S. (iv) Private notes and government notes coexisted in all three countries until governments took actions to drive private bank notes out of circulation. Using the experience of the three countries, the paper concludes that fiduciary digital currencies will likewise not be perfectly safe without government intervention. Further, the introduction of government digital currency will not drive out existing private digital currencies nor will it preclude private digital currencies from entering the market. Government intervention likely will be required for private and government digital currencies to be a uniform currency.

On the Evolution of the United Kingdom Price Distributions

We propose a functional principal components method that accounts for stratified random sample weighting and time dependence in the observations to understand the evolution of distributions of monthly micro-level consumer prices for the United Kingdom (UK). We apply the method to publicly available monthly data on individual-good prices collected in retail stores by the UK Office for National Statistics for the construction of the UK Consumer Price Index from March 1996 to September 2015. In addition, we conduct Monte Carlo simulations to demonstrate the effectiveness of our methodology. Our method allows us to visualize the dynamics of the price distribution and uncovers interesting patterns during the sample period. Further, we demonstrate the efficacy of our methodology with an out-of-sample forecasting algorithm that exploits the time dependence of distributions. Our out-of-sample forecast compares favorably with the random walk forecast.

Ambiguity, Nominal Bond Yields and Real Bond Yields

Equilibrium bond-pricing models rely on inflation being bad news for future growth to generate upward-sloping nominal yield curves. We develop a model that can generate upward-sloping nominal and real yield curves by instead using ambiguity about inflation and growth. Ambiguity can help resolve the puzzling fact that upward-sloping yield curves have persisted despite positive inflation shocks changing from negative to positive news about growth in the last twenty years. Investors make decisions using worst-case beliefs, under which the expectations hypothesis roughly holds. However, inflation and growth evolve over time under the true distribution, and this difference makes excess returns on long-term bonds predictable. The model is also consistent with the recent empirical findings on the term structure of equity returns.

Noisy Monetary Policy

We introduce limited information in monetary policy. Agents receive signals from the central bank revealing new information ("news") about the future evolution of the policy rate before changes in the rate actually take place. However, the signal is disturbed by noise. We employ a non-standard vector autoregression procedure to disentangle the economic and financial effects of news and noise in US monetary policy since the mid-1990s. Using survey- and market-based data on federal funds rate expectations, we find that the noisy signal plays a relatively important role for macroeconomic dynamics. A signal reporting news about a future policy tightening shifts policy rate expectations upwards and decreases output and prices. A sizable part of the signal is noise surrounding future monetary policy

actions. The noise decreases output and prices and can explain up to 16% and 13% of their variations, respectively. Furthermore, it significantly increases the excess bond premium, the corporate spread and financial market volatility, and decreases stock prices.

A Primer on the Canadian Bankers' Acceptance Market

This paper discusses how the bankers' acceptance (BA) market in Canada is organized and its essential link to the Canadian Dollar Offered Rate (CDOR). Globally, BAs are a niche product used only in a limited number of jurisdictions. In Canada, BAs provide a key source of funding for small and medium-sized corporate borrowers that may not otherwise have direct access to the primary funding market because of their size and credit ratings. More recently, BAs have also become an increasingly important funding source for large corporate borrowers because of credit-rating downgrades in certain sectors and industry consolidation. With the market's continued growth, BAs account for the greatest portion of money market instruments issued by non-government entities and are the second-largest money market instrument overall in Canada, averaging just over 25 per cent of the total domestic money market in 2017. For the investment community in Canada, BAs provide a source of short-term income and liquidity because of their relatively attractive yield, liquidity and credit ratings.

The BA market is intrinsically linked to CDOR, which was originally developed to establish a daily benchmark reference rate for BA borrowings. This rate is quite nuanced compared with rates in other jurisdictions in that it is not directly a bank borrowing rate. Instead, it is a committed lending rate at which banks are contractually willing to lend cash to corporate borrowers with existing BA facilities. CDOR is also used as the main interest rate benchmark for calculating the floating-rate component of both over-the-counter and exchange-traded Canadian-dollar derivative products. Another use of CDOR is to determine interest payments on floating-rate notes.

UPCOMING EVENTS

Isabelle Salle (University of Amsterdam), 5 July 2018
Organizer: Guillaume Bedard Page (FMD)

Yongsung Chang (University of Rochester), 6 July 2018
Organizer: Youngmin Park (CEA)

Richard Harrison (Bank of England), 25 July 2018
Organizer: Thomas Carter (CEA)

Michael Bauer (Federal Reserve Bank of San Francisco), 28 August 2018
Organizer: FMD

Bank of Canada – Monetary Policy Communications Conference, 12-14 September 2018
Organizer: FMD-MPAR

Emanuel Moench (Bundesbank), 20 September 2018
Organizer: Rodrigo Sekkel (FMD)

Matthias Kehrig (Duke University), 21 September 2018
Organizer: Dmitry Matveev (CEA)

Matthias O. Paustian (Federal Reserve Board), 12 October 2018
Organizer: Romanos Priftis (CEA)

Natalia Ramondo (University of California in San Diego), 19 October 2018
Organizer: Anthony Landry (CEA)

Brent Hickman (Queen's University), 25 October 2018
Organizer: Jason Allen (FMD)

Kevin Lim (University of Toronto), 26 October 2018
Organizer: Ben Tomlin (CEA)

Albert Queralto (Federal Reserve Board), 16 November 2018
Organizer: Martin Kuncl (CEA)

Jonathan Parker (Massachusetts Institute of Technology), 29 November 2018
Organizer: Miguel Molico (FSD)